

Instruction Manual



CRI-A

Folding Offset Disc Harrow Remote Control

BALDAN

INTRODUCTION

We thank you for the preference and congratulate your excellent choice in acquiring an implement of outstanding quality, manufactured in accordance with the advanced technology of **BALDAN IMPLEMENTOS AGRÍCOLAS S/A**.

This manual will assist you, in proceeds necessities, since when you bought until the operational proceeds application, security and maintenance.

The **BALDAN** guarantees that deliver this implement to the dealer, working properly, and in perfect conditions.

The dealers it's under the responsibility to keep the protection and conservation while keep the implement in your stock, and than, to assembly, tighten, lubrication and overhaul.

On time of the technical deliver, the dealer must to have conducted the user customer about the manutentation, safety, and your obligations in a possible technical assistance, the obligation to see the warranty terms and read the instruction manual. Any solicitation of warranty, please contact our Baldan technical service, by your Baldan dealer that you bought our implement. Reaffirm the necessity to read carefully of warranty certificate and note all of items from this manual, therefore you will increase the working life of your equipment.



Instruction Manual



CRI-A

Folding Offset Disc Harrow Remote Control

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

CNPJ: 52.311.347/0009-06

Insc. Est.: 441.016.953.110



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device and access this
Instruction Manual online.

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01. SAFETY RULES

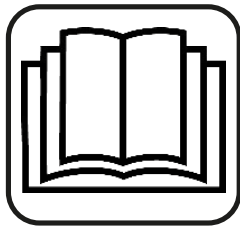


THIS SYMBOL INDICATES IMPORTANT SAFETY WARNING. EVERY TIME YOU SEE IT IN THIS MANUAL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND PAY ATTENTION TO THE POSSIBILITY OF PERSONAL ACCIDENTS.



ATTENTION

- *Carefully read the instructions manual to know the recommended safety practices.*



ATTENTION

- *Only start operating the tractor when you are duly accommodated and with the seat belt locked.*



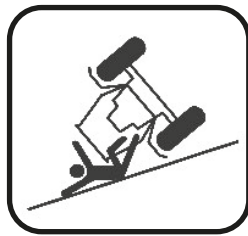
ATTENTION

- *Do not transport people on the tractor and neither inside nor over the equipment.*



ATTENTION

- *There are risks of severe injuries due to falling when working on sloped lands.*
- *Do not use excess speed.*





ATTENTION

- *Do not work with the tractor if the front is not heavy enough for the back equipment.*
- *Add weights to the front or front wheels in case it may be raised.*



ATTENTION

- *Before executing any maintenance on your equipment, check if it is at a standstill.*
- *Avoid being hit.*



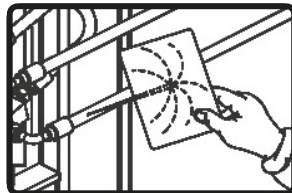
ATTENTION

- *Always stay away from active elements of the equipment (Discs) as they are sharp and can cause accidents.*
- *Use safety gloves on your hands when performing services on the discs.*



ATTENTION

- *When searching for a possible leak on the hoses, use a piece of cardboard or wood and never use your hands.*
- *Avoid the incision of fluid on the skin.*





ATTENTION

- When transporting the CRI-A, do not exceed the speed of 16 Km/h or 10 MPH, avoiding risks of damages and accidents.



ATTENTION

- When working with the CRI-A, do not exceed the speed of 8 Km/h or 5 MPH, avoiding risk of damages and accidents.



ATTENTION

- The hydraulic oil works under pressure and can cause serious injuries in the case of leaks. Periodically check the state of conservation of the hoses. Immediately replace in the case of leaks.
- Before connecting or disconnecting the hydraulic hoses, release the pressure of the system, activating the control with the tractor switched off.



NR-31 – OCCUPATIONAL SAFETY AND HEALTH IN AGRICULTURE, LIVESTOCK, FORESTATION, FOREST EXPLORATION AND AQUICULTURE.

This objective of this Regulatory Standard is to establish the precepts to be observed in the organization and in the work environment, compatible with planning and development of the agricultural, livestock, forestation, forest exploration and aquiculture activities with occupational safety, health and environment.

THE OWNER OR OPERATOR OF THE EQUIPMENT.

Carefully read and observe the provision in NR-31.

For more information, consult the site and read the full NR-31.

<http://portal.mte.gov.br/legislacao/normas-regulamentadoras-1.htm>



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Instruction Manual









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WARNING

INCORRECT USE OF THIS EQUIPMENT MAY RESULT IN SERIOUS OR EVEN FATAL ACCIDENTS. BEFORE PLACING THE IMPLEMENT INTO OPERATION, CAREFULLY READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL. ENSURE THAT THE PERSON RESPONSIBLE FOR THE OPERATION HAS BEEN INSTRUCTED ON THE CORRECT AND SAFE USE, HAVING READ AND UNDERSTOOD THIS MACHINE'S INSTRUCTION MANUAL.

- 01- ⚠ When operating with the equipment, prevent people from staying too close to or over the implement.**
- 02- ⚠ Use gloves during the mounting or dismounting in the disc sections.**
- 03- ⚠ Relieve the pressure of the circuit when switching the hydraulic hoses on or off.**
- 04- ⚠ Periodically check the state of conservation of the hoses. Immediately replace it in the case of leaks because the oil operates at high pressure and can cause serious injuries.**
- 05- ⚠ Do not use loose clothing as it can get caught on the equipment.**
- 06- ⚠ When activating the tractor engine, be properly seated on the operator seat and have complete knowledge of the correct and safe handling of the tractor as well as the equipment. Always keep the gear stick in the neutral position, switch o the power take-o control gearing and place the hydraulic controls in the neutral position.**
- 07- ⚠ Do not start the tractor engine in a closed setting without suitable ventilation because the exhaust gases are dangerous to health.**
- 08- ⚠ When maneuvering the tractor to the coupler of the equipment, make sure there is enough space and no one too close to it, always maneuver in reduced speed and be prepared to brake in an emergency.**

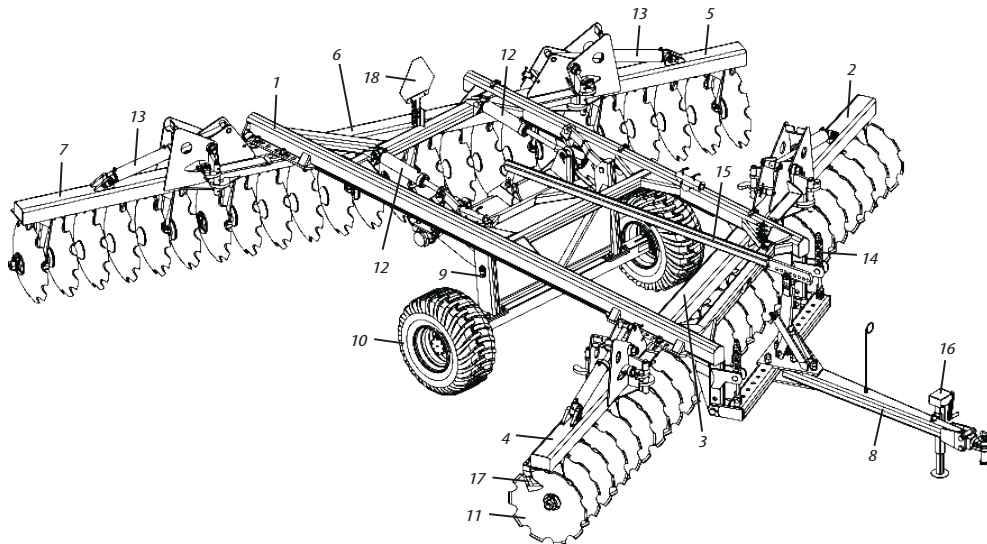
- 09-  Do not make adjustments with the equipment in operation.
- 10-  When working on sloped lands, proceed carefully, always maintaining the necessary stability. In the case of misbalance, reduce the speed, turn the wheels towards the sloped side of the land and never raise the equipment.
- 11-  Always drive the tractor at speeds compatible with safety, especially in works on uneven lands or slopes, always keep the tractor coupled.
- 12-  When driving the tractors on streets, keep the brake pedals interconnected.
- 13-  Do not work with the tractor if the front is light. Add weights to the front or front wheels in case it may be raised.
- 14-  When leaving the tractor, put the brake handle in the neutral position and use the parking brake. Never leave the equipment coupled to the tractor with the hydraulic system in the raised position.
- 15-  Alcoholic drinks or some drugs may cause loss of reflexes and change the physical conditions of the operator. Therefore, never operate this equipment when under the influence of these substances.
- 16-  Read or explain all the procedure above to the user that cannot read.

*In the case of doubts consult the After Sales
Telephone: 0800-152577 / E-mail: posvenda@baldan.com.br*

FOLDING OFFSET DISC HARROW REMOTE CONTROL - CRI-A

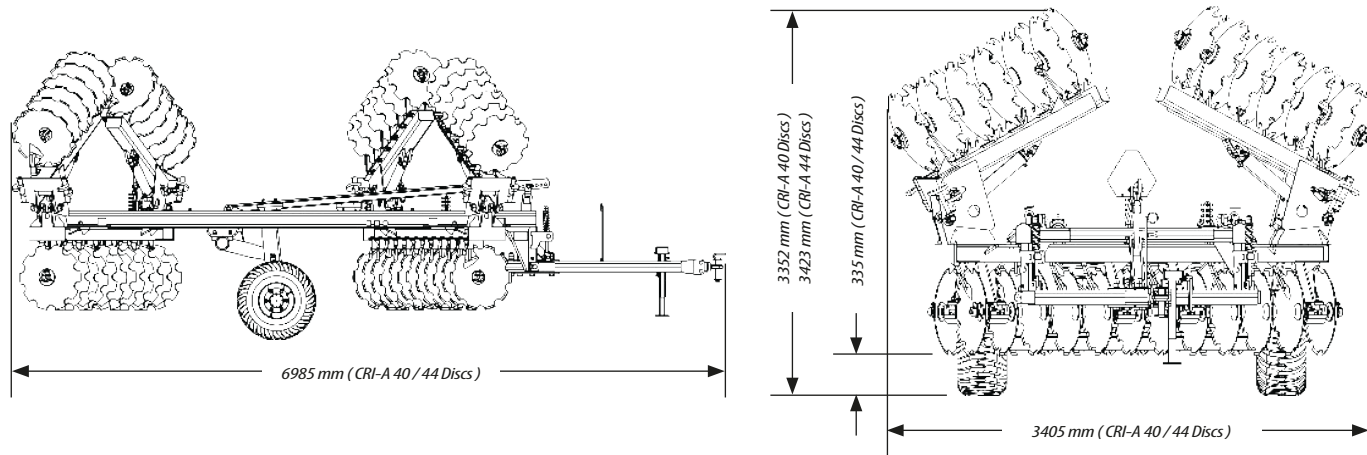
02. COMPONENTS

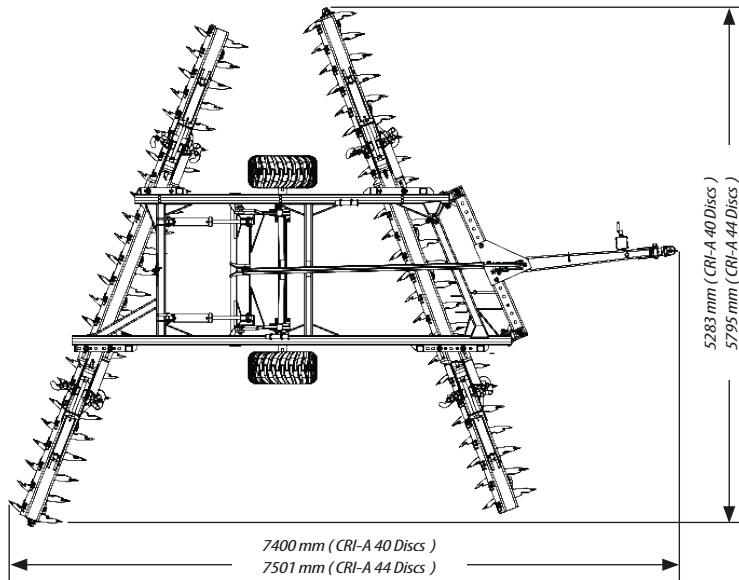
- 01 - Stiffener
- 02 - Left side front frame
- 03 - Center front frame
- 04 - Right side front frame
- 05 - Left side back frame
- 06 - Center back frame
- 07 - Right side back frame
- 08 - Coupling header
- 09 - Articulation shaft support
- 10 - Tires
- 11 - Discs
- 12 - Wheel articulation pistons
- 13 - Side articulation pistons
- 14 - Stabilizer rod
- 15 - Lifter stabilizer bar
- 16 - Lift support (mechanical jack)
- 17 - Cleaners
- 18 - Sign plate



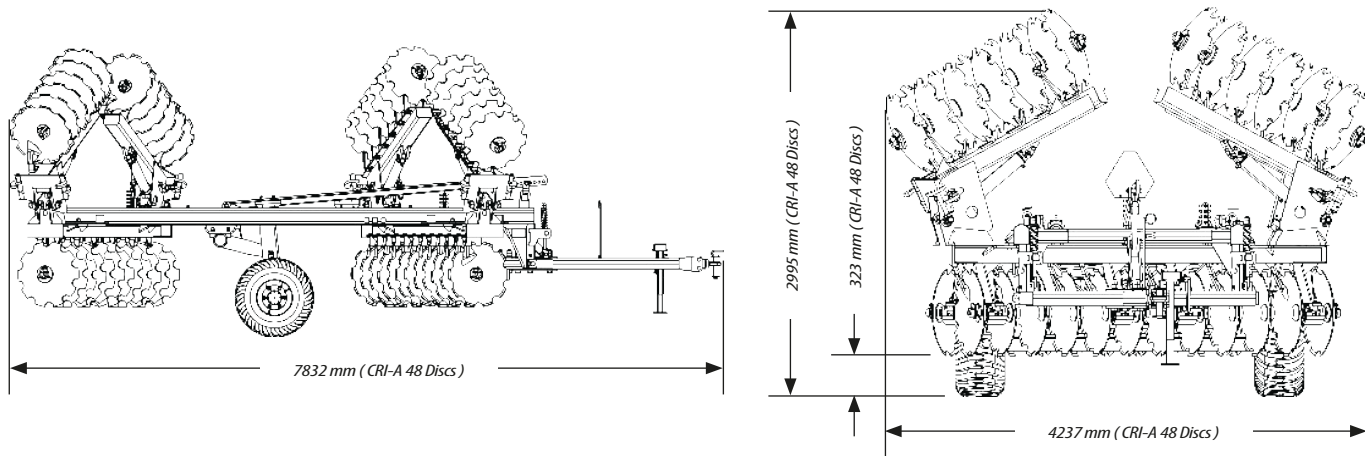
03. DIMENSIONS

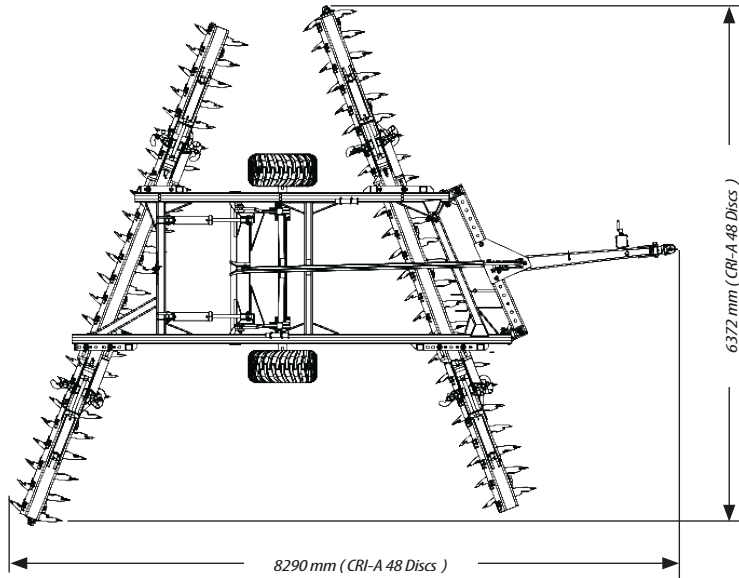
DIMENSIONS CRI-A 40 / 44 DISCS - PART I





DIMENSIONS CRI-A 48 DISCS - PART I





04. TECHNICAL SPECIFICATIONS



Table 01

Model	Nr of Discs	Spacing between Discs (mm)	Discs diameter (ø)	Concave Discs (mm)	Shaft diameter (ø)	Working width (mm)	Working depth (mm)	Approximate weight (Kg)		Tractor Power (HP)	Wheelsets
								26"	28"		
CRI-A	40	270	26" e 28"	6,0 e 7,5	1.5/8"	5290	150 - 250	0	5440	240 - 260	Duplo 400x60
CRI-A	44	270	26" e 28"	6,0 e 7,5	1.5/8"	5840	150 - 250	0	5650	264 - 280	
CRI-A	48	270	26" e 28"	6,0 e 7,5	1.5/8"	6390	150 - 250	0	6000	288 - 303	

*Baldan reserves the right to change the technical features of this product without prior warning.
The technical specifications are approximate and informed in the normal working conditions.*

05. ASSEMBLY

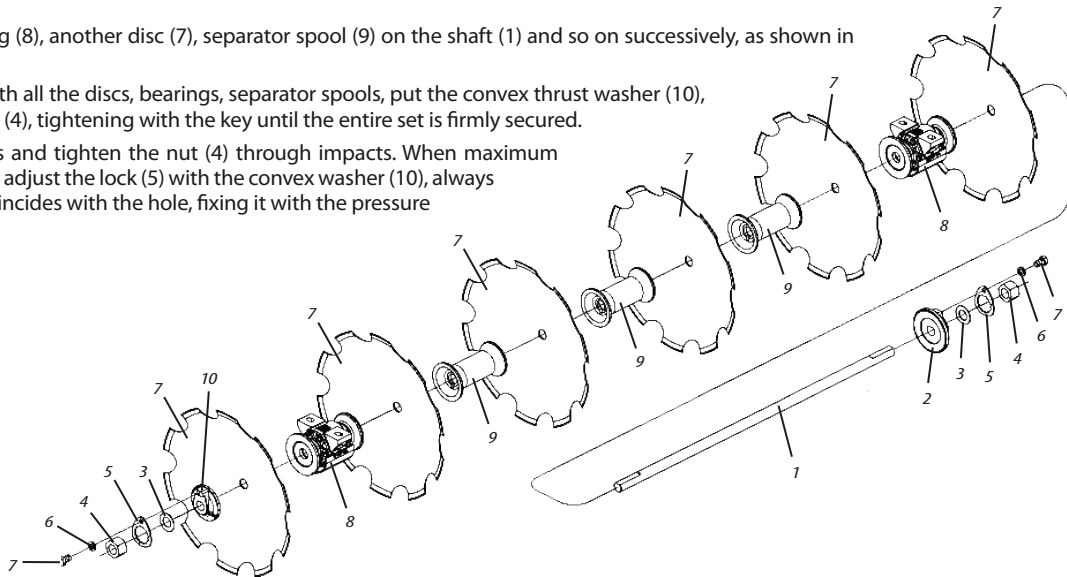
- The **CRI-A** harrows leave's the factory dismounted. To mount them, follow the instructions below:

- 1 -  Use safety gloves on your hands when performing mounting and dismounting services on the discs.
- 2 -  Do not use loose clothing because it can get caught on the equipment.

MOUNTING OF DISC SECTION CRI - A 40 / 44 / 48 DISCS

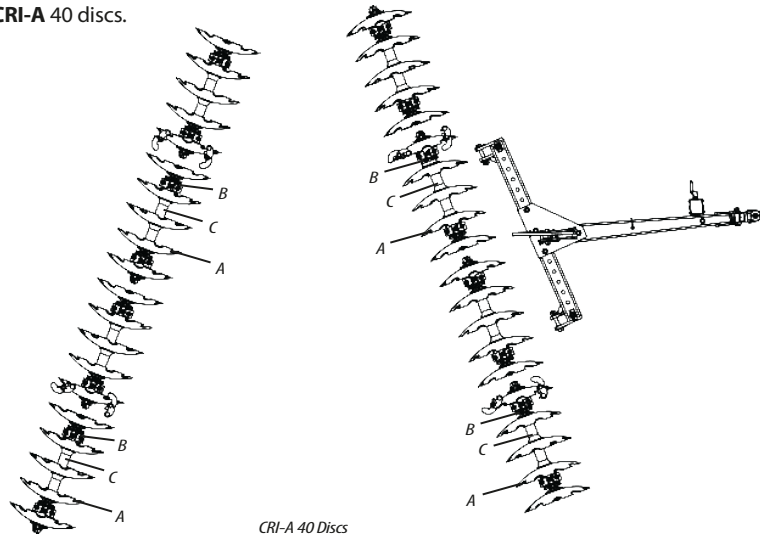
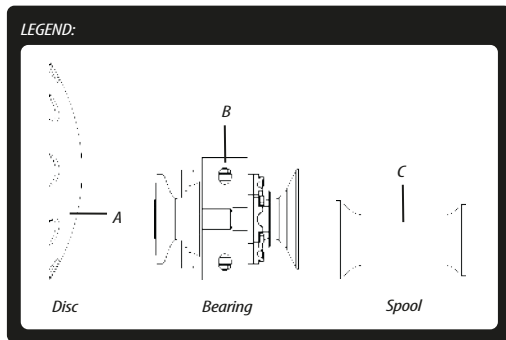
- When mounting the **CRI-A**, always start with the set of discs and proceed as follows:

- 01** -Place the concave thrust washer (2) on the shaft (1), followed by the washer (3), nut (4) and lock (5), securing it with the pressure washer (6) and bolt (7).
- 02** -Then put the disc (7), bearing (8), another disc (7), separator spool (9) on the shaft (1) and so on successively, as shown in figure 4.
- 03** -When the set is complete with all the discs, bearings, separator spools, put the convex thrust washer (10), the other washer (3) and nut (4), tightening with the key until the entire set is firmly secured.
- 04** -Then wedge the set of discs and tighten the nut (4) through impacts. When maximum tightness is almost obtained, adjust the lock (5) with the convex washer (10), always tightening the nut until it coincides with the hole, fixing it with the pressure washer (6) and bolt (7).



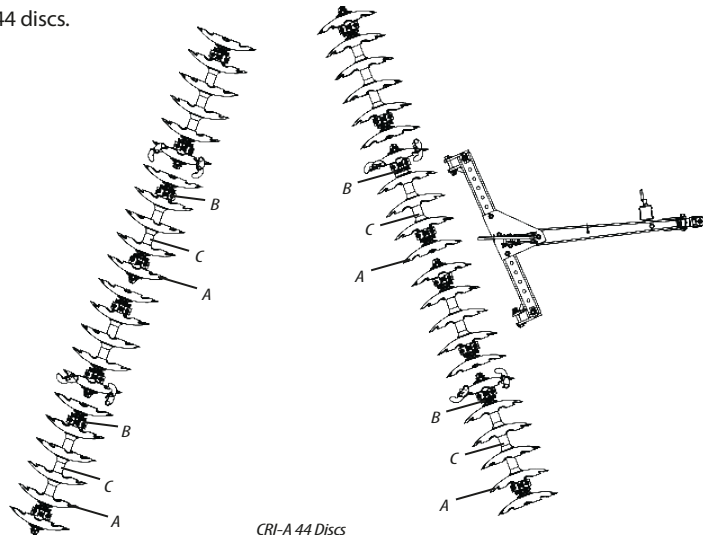
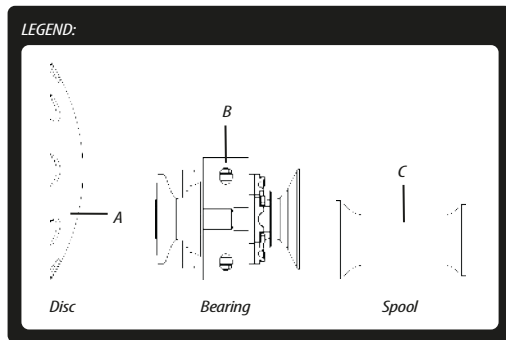
MOUNTING OF DISC SECTIONS CRI-A 40 DISCS

01 - The figure below shows the mounting of the disc sections of **CRI-A** 40 discs.



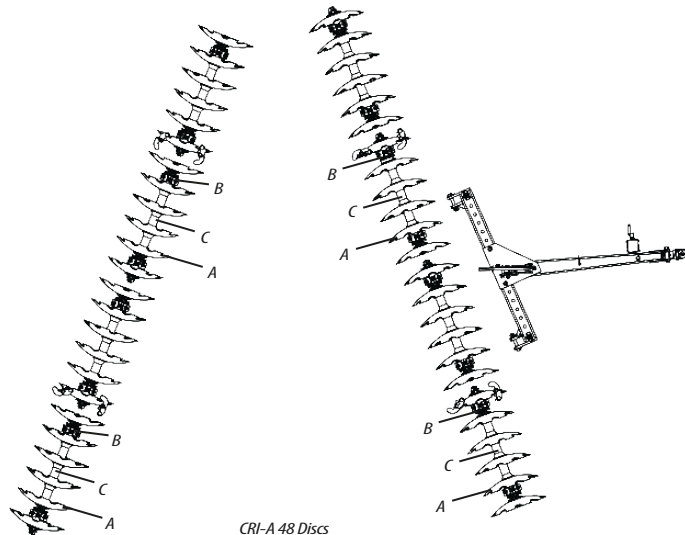
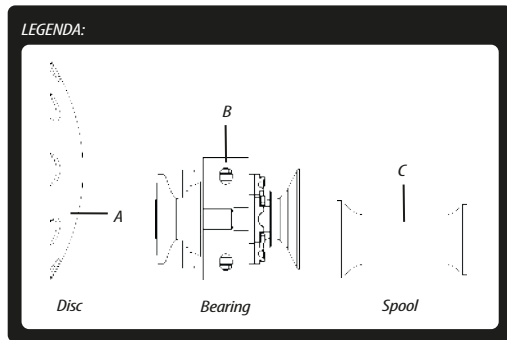
MOUNTING OF DISC SECTIONS CRI-A 44 DISCS

01 - The figure below shows the mounting of the disc sections of **CRI-A** 44 discs.



MOUNTING OF DISC SECTIONS CRI-A 48 DISCS

01 -Figure 7 shows the mounting of the disc sections of **CRI-A** 48 discs.

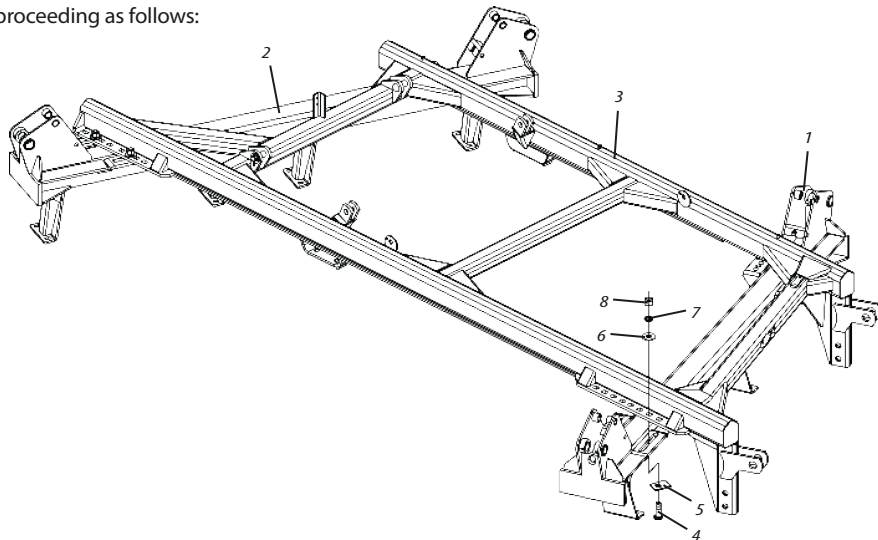


CRI-A 48 Discs

MOUNTING OF CENTER FRAMES ON THE STIFFENER CRI -A 40 / 44 / 48 DISCS

- Start mounting the **CRI-A** with the center frames, proceeding as follows:

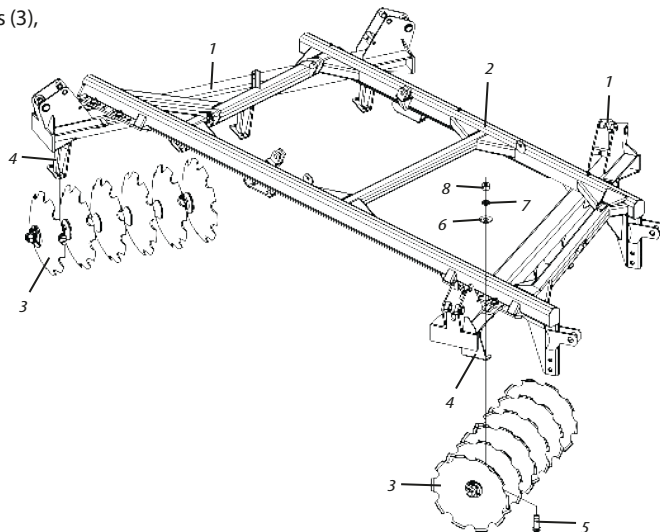
- 01** -Put the front center frames (1) and back center frames (2) on a flat and clean place.
- 02** -Then put the stiffener (3) on the front (1) and back center frames (2), securing them with the bolt (4), lock (5), flat washer (6), pressure washer (7) and nut (8).



MOUNTING OF DISC SECTIONS ON CENTER FRAMES CRI -A 40 / 44 / 48 DISCS

- After fixing the center frames (1) on the stiffener (2), attach the disc sections (3), proceeding as follows:

- 01 -Raise the front or back part of the harrow and place the disc section (3) in row and coincide the holes of the wedges (4) with the bearings, then secure using the bolts (5), flat washer (6), pressure washer (7) and nut (8).
- 02 -Then raise the other part of the harrow and repeat the operation, checking the concavity of the discs of one section to the other, which must be otherwise.
- 03 -After mounting, check to see if the wedges (4) are facing the concavity of the discs.



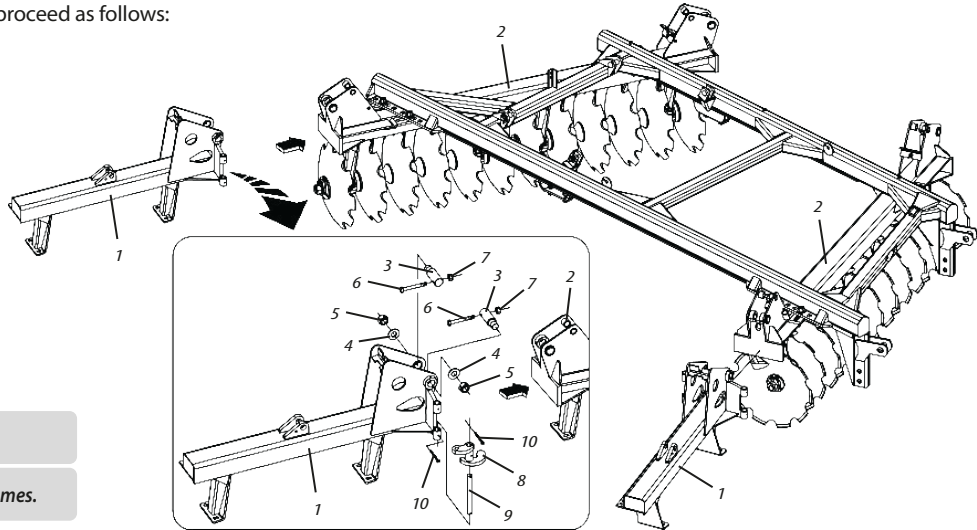
ATTENTION

When mounting the disc sections on the frames, ensure that the wedges of the frames face the concavity of the discs.

MOUNTING OF SIDE FRAMES CRI -A 40 / 44 / 48 DISCS

- To mount the side frames of the **CRI-A**, proceed as follows:

- 01** -Couple the side frames (1) to the center frames (2).
- 02** -Then insert the pins (3), securing using at washers (4) and nuts (5), locking using the bolts (6) and nuts (7).
- 03** -Finish by placing the supports (8), securing using the pins (9) and retaining pins (10).



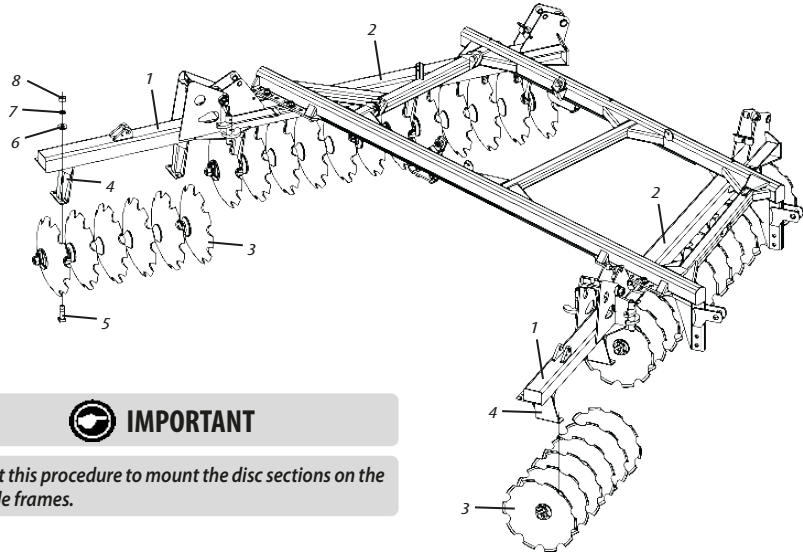
ATTENTION

Repeat this procedure to mount the left side frames.

MOUNTING OF DISC SECTIONS ON SIDE FRAMES CRI -A 40 / 44 / 48 DISCS

- After fixing the side frames (1) on the center frames (2), attach the disc sections (3), proceeding as follows:

- 01 - Raise the front or back part of the harrow and place the disc section (3) in row and coincide the holes of the wedges (4) with the bearings, then secure using the bolts (5), flat washer (6), pressure washer (7) and nut (8).
- 02 - Then raise the other part of the harrow and repeat the operation, checking the concavity of the discs of one section to the other, which must be otherwise.
- 03 - After mounting, check to see if the wedges (4) are facing the concavity of the discs.



ATTENTION

When mounting the disc sections on the side frames, ensure that the wedges of the side frames face the concavity of the discs.



IMPORTANT

Repeat this procedure to mount the disc sections on the left side frames.

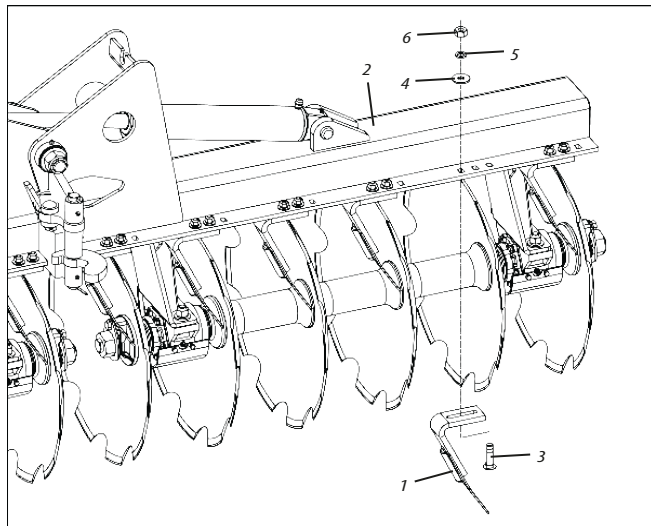
MOUNTING OF CLEANERS CRI -A 40 / 44 / 48 DISCS

- After mounting the disc sections on the frames, attach the cleaners (1), proceeding as follows:
- 01** - Put the cleaners (1) on the frames (2), securing them with bolts (3), flat washers (4), pressure washers (5) and nuts (6).



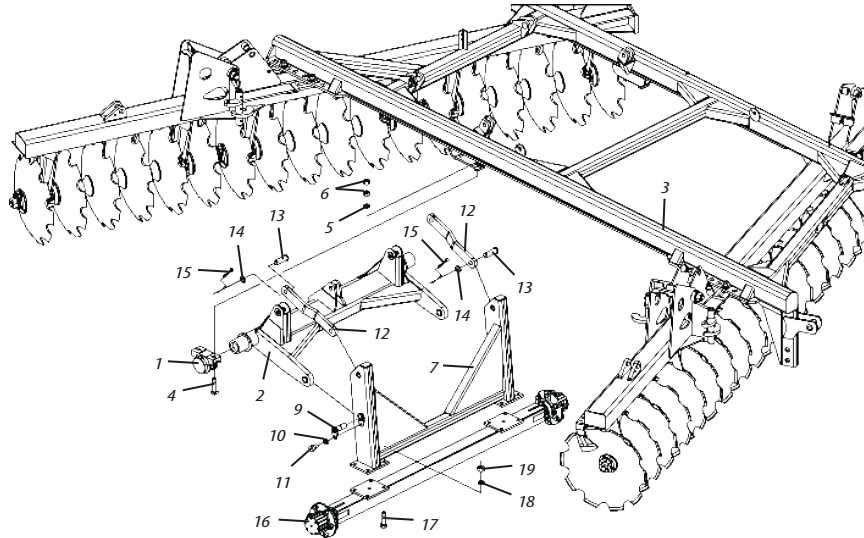
ATTENTION

When mounting the cleaners, these should be 0.5 to 1.0 cm away from the discs.



MOUNTING OF STIFFENER WHEEL SUPPORT CRI -A 40 / 44 / 48 DISCS

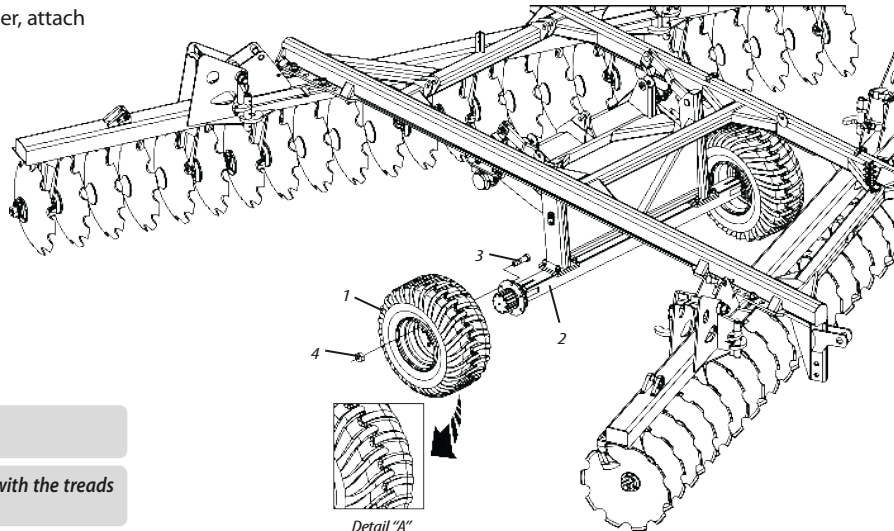
- To mount the wheel support (1) in the center frame proceed as follows:
- 01** - Couple the hub (1) to the articulation shaft of the tires (2) and secure the hub (1) to the stiffener (3) through bolts (4), pressure washers (5) and nuts (6).
 - 02** - Then couple the shaft support (7) to the articulation shaft of the tires (2), securing using the pin (9), pressure washer (10) and bolts (11).
 - 03** - After, place the bars (12) on the shaft support (7) and stiffener (3), securing with the pins (13), flat washers (14) and retaining pin (15).
 - 04** - Finish by coupling the shaft (16) to the shaft support (7), securing with the bolts (17), pressure washers (18) and nuts (19).



MOUNTING OF TIRES CRI -A 40 / 44 / 48 DISCS

- After mounting the wheel support on the stiffener, attach the tires (1), proceeding as follows:

- 01 - Couple the tires (1) to the wheel support (2) using the bolts (3) and nuts (4).



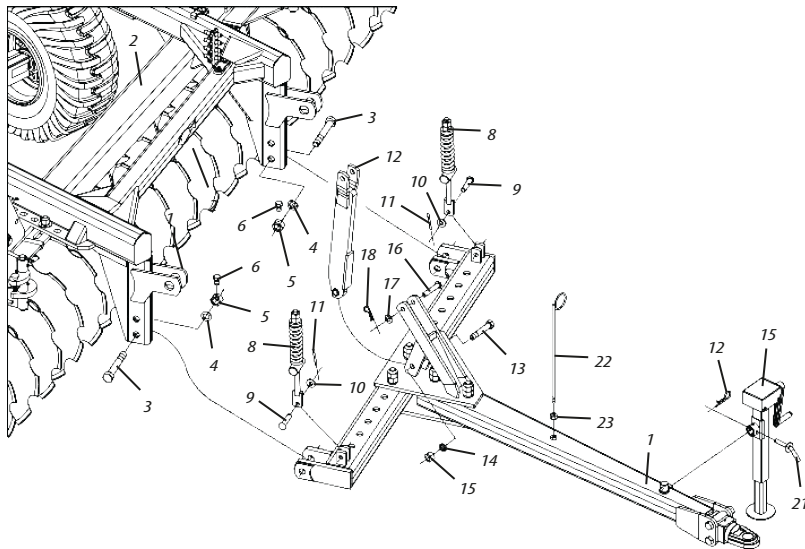
ATTENTION

All the tires should be mounted anti-tractioned, that is, with the treads facing the front of the CRI-A, as shown in detail "A".

MOUNTING OF COUPLING HEADER CRI - A 40 / 44 / 48 DISCS

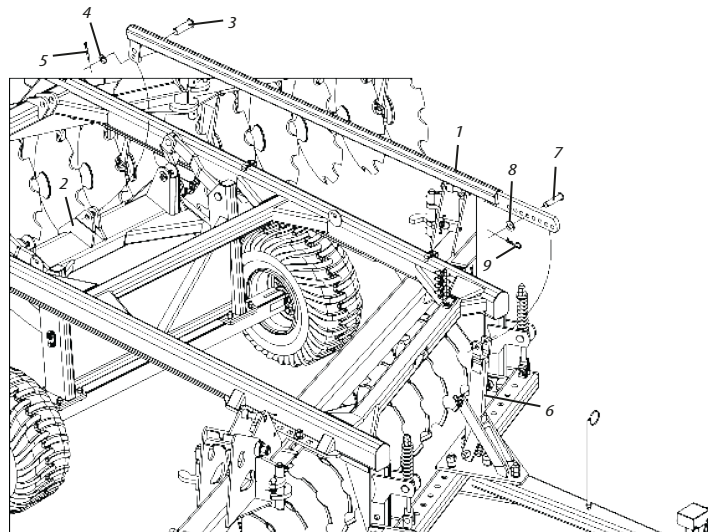
• To mount the coupling header, proceed as follows:

- 01**-Couple the coupling header (1) to the stiffener (2) through bolts (3), pressure washers (4) and nuts (5), locking with the bolts (6).
- 02**-Then attach the rods (8) to the header (1) and to the stiffener (2) using the pins (9), washers (10) and retaining pin (11).
- 03**-Then couple the stabilizer bar support (12) to the header (1) using the bolt (13), pressure washer (14) and nut (15).
- 04**-Afterwards, insert the pin (16) in the header (1), locking the stabilizer bar support (12) with the flat washer (17) and lock (18).
- 05**-Couple the mechanical jack (19) to the header (1) locking it with the pin (20) and lock (21).
- 06**-Lastly, place the hose support (22) and the lock nut (23) on the header (1).



MOUNTING OF ADJUSTING ROD CRI -A 40 / 44 / 48 DISCS

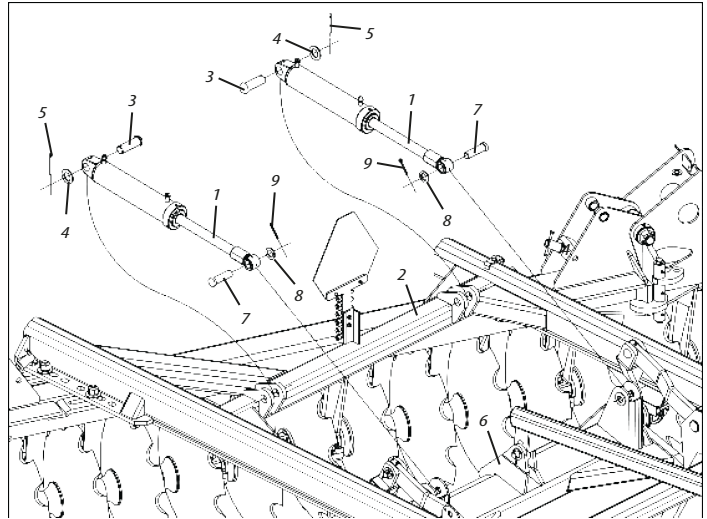
- After mounting the coupling header, attach the adjusting rod (1), proceeding as follows:
 - 01** - Attach the back part of the adjusting rod (1) to the articulation shaft (2) using the pin (3), flat washer (4) and retaining pin (5).
 - 02** - Then, attach the front part of the adjusting rod (1) to the rod support (6) using the pin (7), flat washer (8) and lock (9).



MOUNTING OF CENTRAL HYDRAULIC CYLINDERS CRI - A 40 / 44 / 48 DISCS

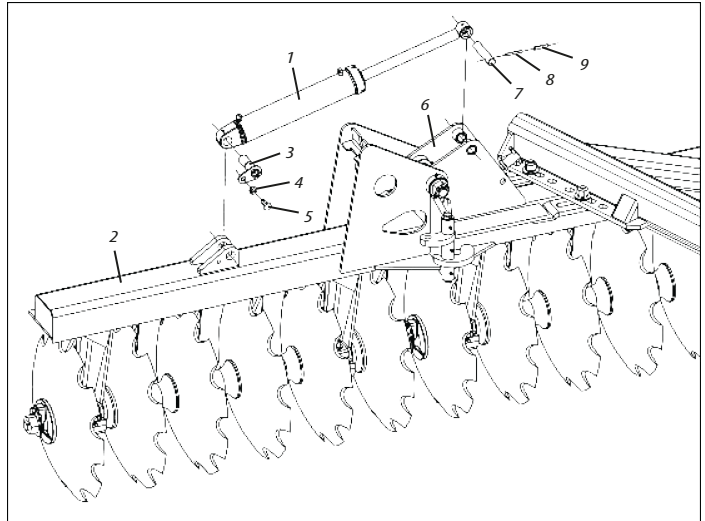
- After mounting the adjusting rod, attach the central hydraulic cylinders proceeding as follows:

- 01** - Couple the bases of the hydraulic cylinders (1) to the stiffener (2) with the pins (3), flat washers (4) and retaining pins (5).
- 02** - Then couple the rods of the hydraulic cylinders (1) to the wheel support (6) with the pins (7), flat washers (8) and retaining pins (9).



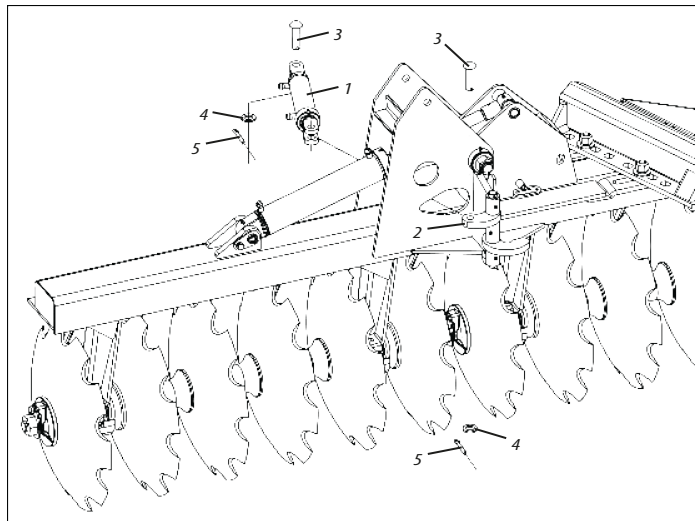
MOUNTING OF SIDE HYDRAULIC CYLINDERS CRI - A 40 / 44 / 48 DISCS

- After mounting the central hydraulic cylinders, attach the side hydraulic cylinders proceeding as follows:
 - 01** - Couple the bases of the hydraulic cylinders (1) to the side frames (2) with the pins (3), pressure washers (4) and bolts (5).
 - 02** - Then couple the rods of the hydraulic cylinders (1) to the center frames (6) with the pins (7) and the elastic pins (8) and (9).



MOUNTING OF INTERNAL CYLINDERS CRI -A 40 / 44 / 48 DISCS

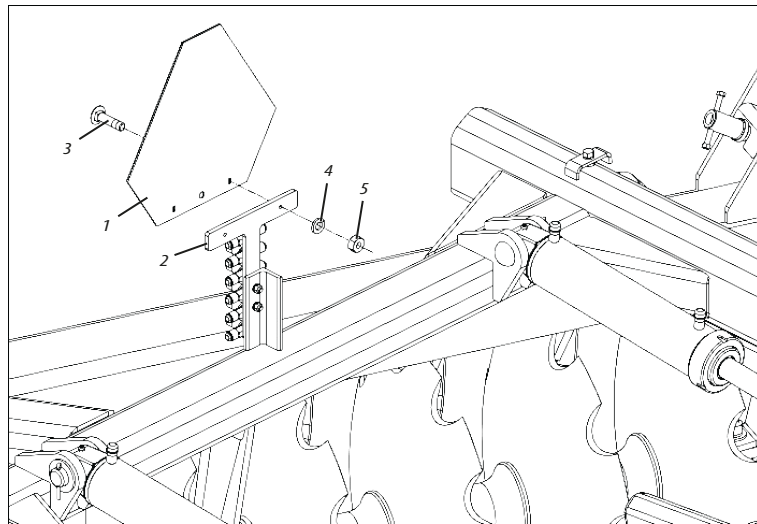
- After mounting the side hydraulic cylinders, attach the internal hydraulic cylinders proceeding as follows:
- 01** - Couple the hydraulic cylinders (1) to the locks (2) with the pins (3), flat washers (4) and retaining pins (5).



MOUNTING OF SIGN PLATE

CRI -A 40 / 44 / 48 DISCS

- After mounting the coupling header, attach the sign plate (1), proceeding as follows:
- 01** - Attach the sign plate (1) to the support (2) using the bolts (3), pressure washers (4) and nuts (5).



ATTENTION

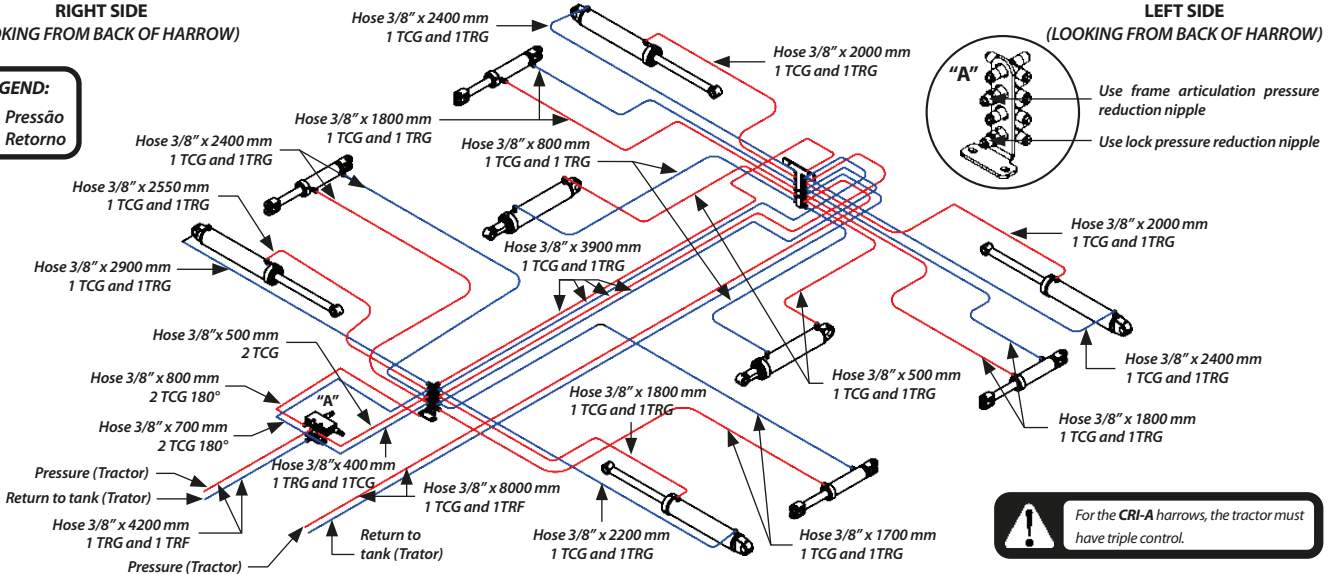
Do not transport the harrow without the sign plate mounted.

MOUNTING OF HYDRAULIC SYSTEM - CRI-A 40 / 44 DISCS

RIGHT SIDE
(LOOKING FROM BACK OF HARROW)

LEGEND:

■ Pressão
■ Retorno

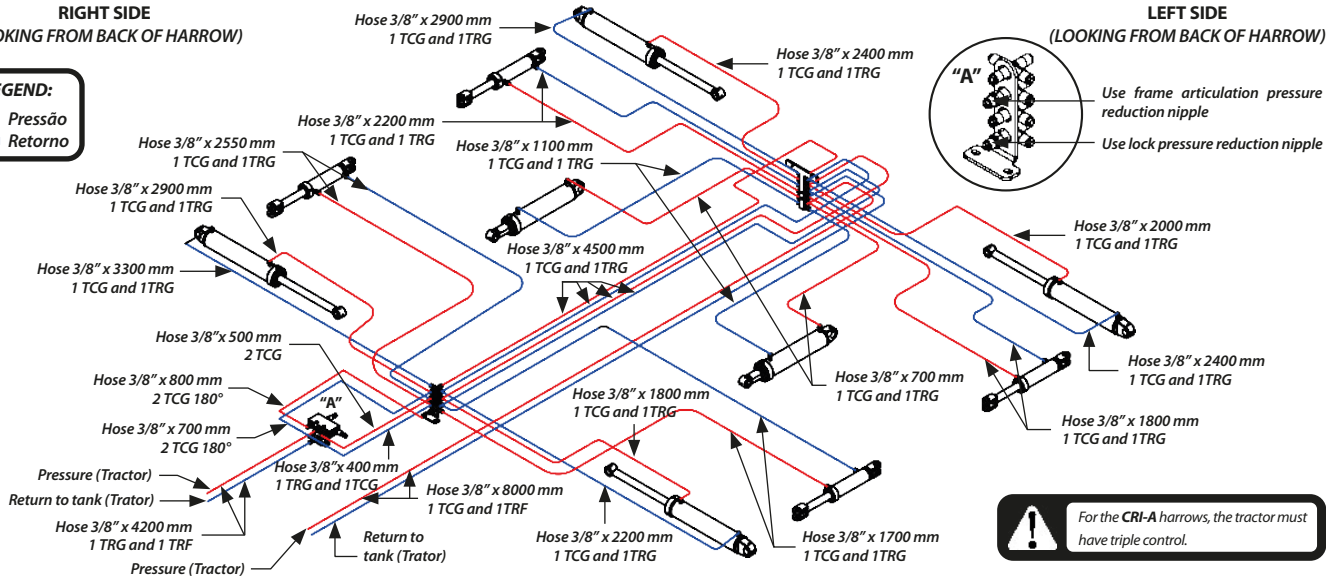


MOUNTING OF HYDRAULIC SYSTEM - CRI-A 48 DISCS

RIGHT SIDE
(LOOKING FROM BACK OF HARROW)

LEGEND:

■ Pressão
■ Retorno



For the **CRI-A** harrows, the tractor must have triple control.

06. COUPLING

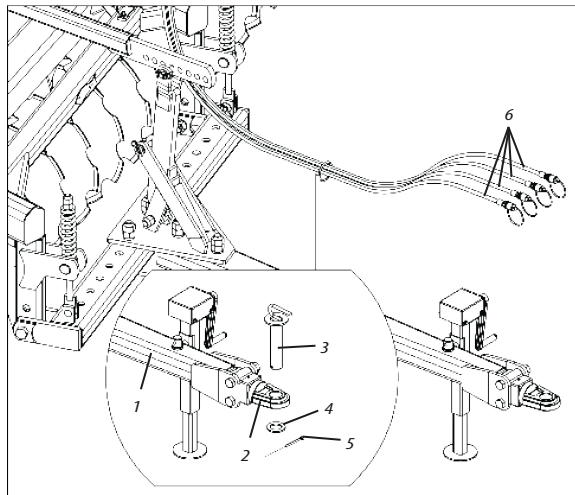
COUPLING THE HARROW TO TRACTION BAR OF THE TRACTOR CRI-A 40 / 44 / 48 DISCS

- To couple the **CRI-A** to the traction bar of the tractor, follow the instructions below:

- 01 - Before coupling the **CRI-A**, look for a safe place of easy access.
- 02 - Always use reduced gear with low acceleration.
- 03 - Before connecting or disconnecting the hydraulic hoses, stop the engine and release the pressure of the circuit by fully activating the control handles.
- 04 - Make sure no one gets injured by the equipment movement when releasing the pressure of the system.

- Observe the instructions below and proceed as follows:

- 01** - Level the coupling header (1) of the **CRI-A** in relation to the tractor coupler using the adjusts (2) of the coupling shackle. Then slowly bring the tractor close to the harrow on reverse, paying attention to the application of the brakes.
- 02** - Proceed with coupling the **CRI-A** to the tractor by attaching it with the coupling pin (3), flat washer (4) and lock (5).
- 03** - Finish coupling the hoses (6) to the quick coupling system of the tractor.



07. ADJUSTMENTS

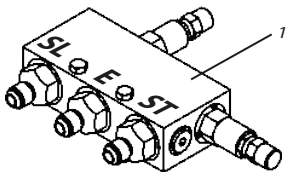
ADJUSTMENT HYDRAULIC SYSTEM - PART I

CRI-A 40 / 44 / 48 DISCOS

- The **CRI-A** hydraulic system has a sequential valve to make the articulation, locking and unlocking operations of the frames in the same drive. To adjust the hydraulic system, proceed as follows:

1° SEQUENTIAL VALVE BLOCK:

- Analyze the valve (1) on which the codes **SL / E / ST** must be engraved.
- Check carefully the abbreviations **SL / ST**, as these abbreviations represent the pressure in each cartridge (**SL**: 210 Bar / **ST**: 105 Bar).



LEGEND:

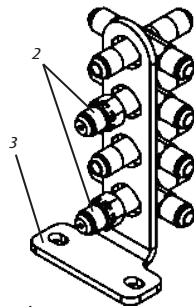
SL: Lift system.

E: Valve inlet.

ST: Locking system.

2° HYDRAULIC SYSTEM:

- In the hydraulic system, it is essential that the hoses are correctly connected to the valve body, hydraulic cylinders, distributor and also that the pressure reduction nipples (2) in the distributor (3) are used to keep the system slower in the descent of the frames and locking them.



3° HYDRAULIC ACTIVATION:

- After checking the previous items, perform the test by moving the tractor lever gently to check the proper functioning of the valve.



ATTENTION

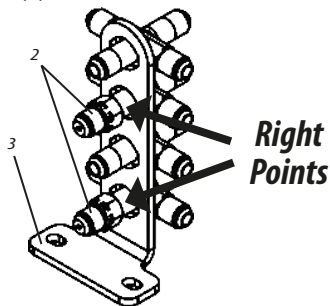
If the system is not working properly, proceed as instructed on the following page.

ADJUSTMENT HYDRAULIC SYSTEM - PART II

CRI-A 40 / 44 / 48 DISCOS

4° VALVE ADJUSTMENT:

- 01 - Check if the hose connections are correct according to the model of **CRI-A** purchased (pages 34 and 35).
- 02 - Check that the pressure reducing nipples (2) are engaged at the right points on the distributor (3).



- 03 - Check the valve adjustment, for this, proceed as follows:

- 1) The **ST** cartridge must be fully open.
- 2) The **SL** cartridge must have only 1 open turn. If in doubt about this opening, adjust it again by closing the entire cartridge and then opening it one turn.
- 3) After the above procedures, carefully read the warning below to check the system.



ATTENTION

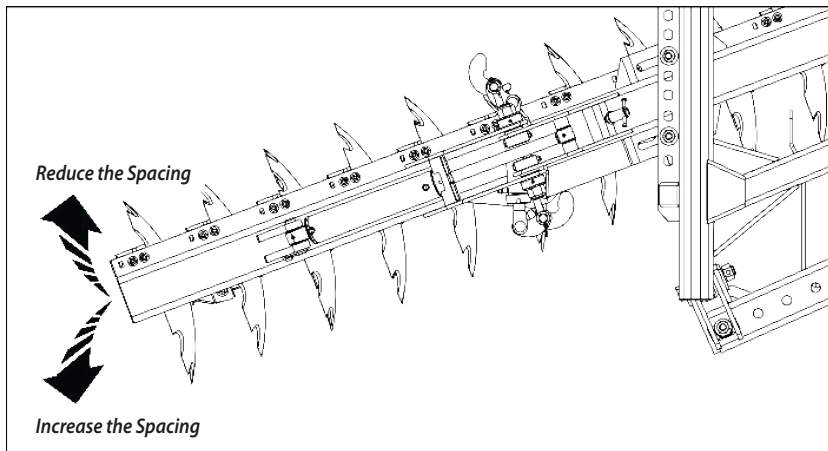
If the tractor is adjusted with a pressure greater than 180 Bar and the lever is fully activated at the beginning of the operation, this may cause the valve to malfunction due to the spring adjustment pressures. The operator must feel the activation intensity for the desired operation, since the tractors have different adjustments in the hydraulic pressures of their systems.

HARROW SPACING ADJUSTMENTS

CRI -A 40 / 44 / 48 DISCS

- To obtain the ideal penetration of the discs, the harrow spacing should be adjusted and this varies with the type of soil:

- 01 - *On lands of greater penetration difficulty, increase the harrow spacing.*
- 02 - *On light and loose lands, reduce the harrow spacing.*

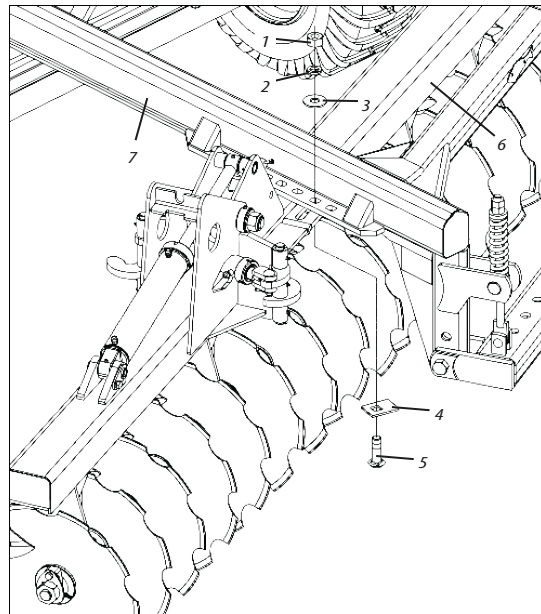


- To open or close the harrow, proceed as follows:

01 -First, loosen the nuts (1), pressure washers (2) and flat washers (3), and remove the locks (4) and bolts (5).

02 -Then adjust the frames (6), reducing or increasing the opening.

03 -After, attach it back to the stiffener (7).

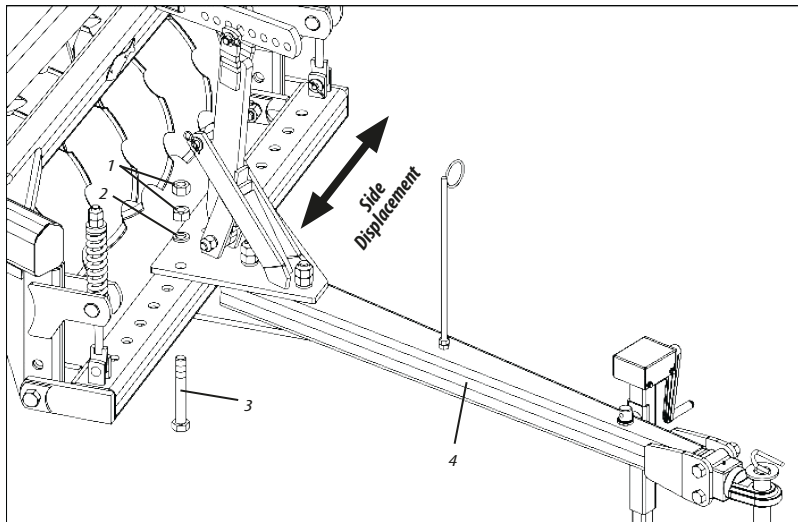


ATTENTION

The wheels also aid in controlling the depth of the discs.

HARROW DISPLACEMENT ADJUSTMENT CRI -A 40 / 44 / 48 DISCS

- Displacement of the harrow must be performed when the harrow is not giving a perfect finish, meaning that it is leaving a trail of the tractor. In order for the harrow to work centralized with the traction line of the tractor, proceed as follows:
- 01** - Loosen the nuts (1), pressure washers (2), then remove the bolts (3) and move the header (4), performing the ideal adjustment.

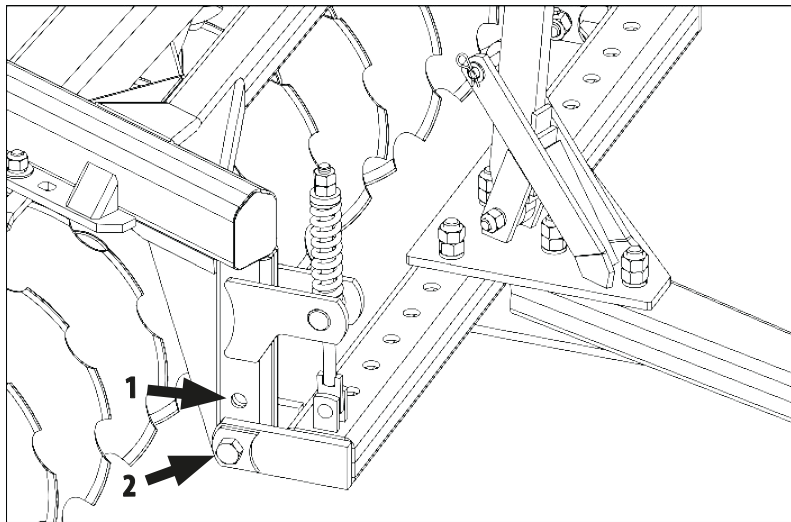


CROSS-SECTIONAL BAR ADJUSTMENT CRI -A 40 / 44 / 48 DISCS

01 -The stiffener (1) has two holes on each side with the main purpose of leveling the header of the harrow in relation to the traction bar of the tractor.

01 - Increase Penetration.

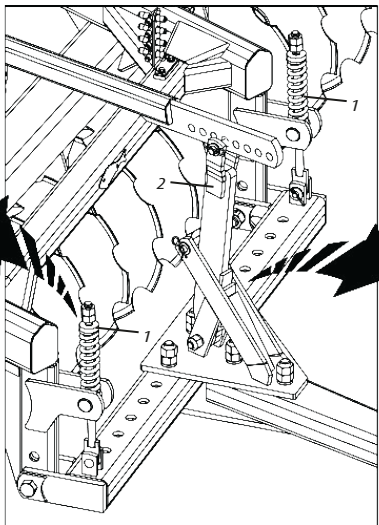
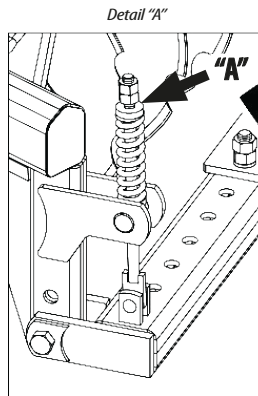
02 - Reduce Penetration.



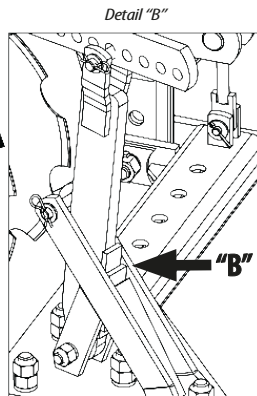
STABILIZER ROD AND STABILIZER ROD SUPPORT ADJUSTMENT

CRI -A 40 / 44 / 48 DISCS

- 01-On the stabilizer rod (1), leave a gap of 10 to 20 mm between the nut and the surface of the spring as shown in **detail "A"**.

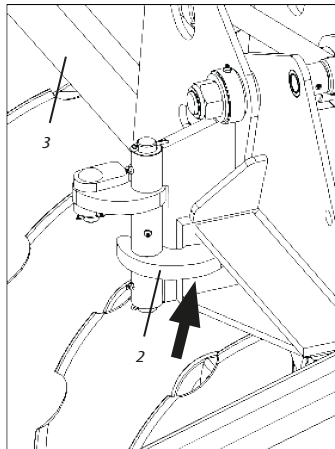
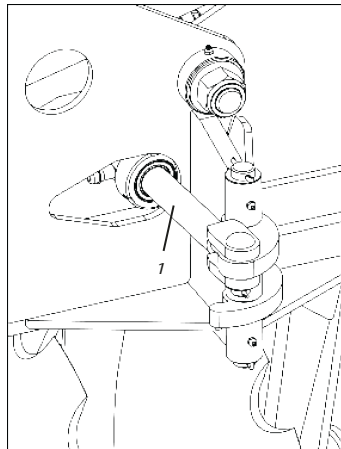


- 02-On the support (2) of the stabilizer bar, leave a gap of 10 to 20 mm between the stabilizer rod and the surface of the upper plate of the header as shown in **detail "B"**.



TRANSPORTATION CRI-A 40 / 44 / 48 DISCS

- Before transporting the **CRI-A**, proceed as follows:



01 - First of all, operate the hydraulic cylinders (1) in order for these to move the support (2), unlocking the side frames (3).

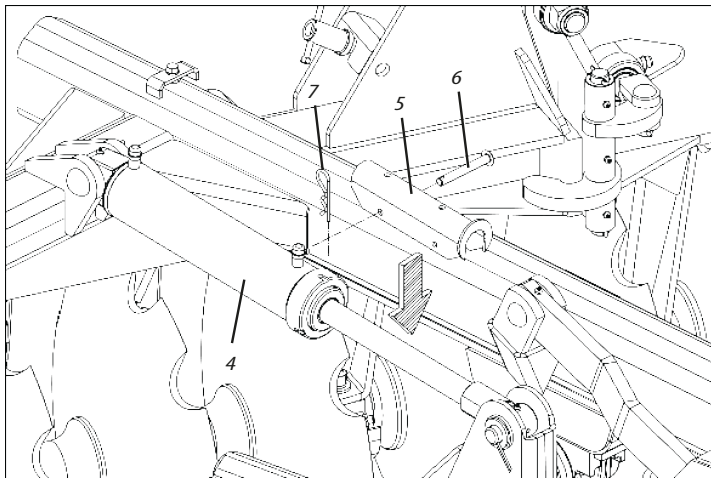
02 - Then articulate the side frames (3).



ATTENTION

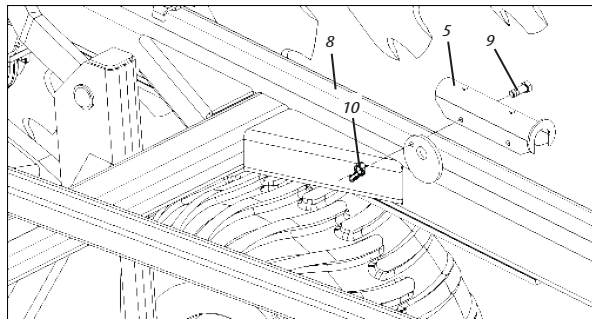
When articulating the CRI-A, avoid having people close to it because of the risk of accidents caused by possible mechanical or hydraulic failure, causing the frame to lower rapidly.

- 03** - Afterwards, operate the rods of the hydraulic cylinders (4) to the necessary measurement.
- 04** - Put the lock (5) on the rods of the hydraulic cylinders (4) until it fills the entire space between the coupling of the rods and the plunger of the hydraulic



cylinders (4) and attach it using the pin (6) and lock (7).

- 05** - After transporting the **CRI-A**, remove the lock (5) from the hydraulic cylinder and attach it to the stienner (8) with the bolt (9) and wing nut (10).

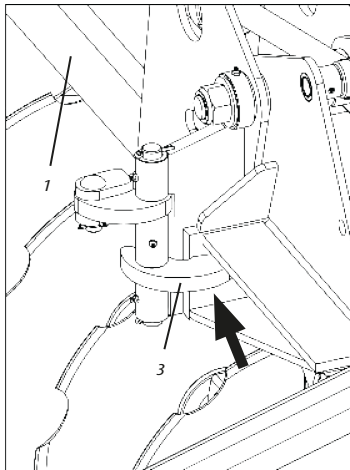
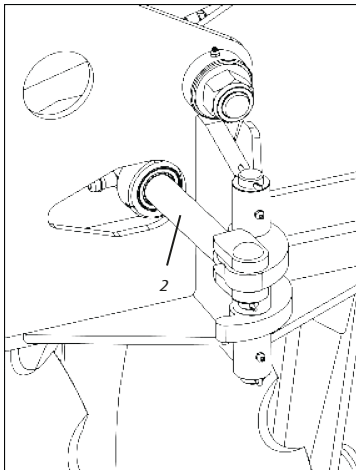


ATTENTION

Do not transport the CRI-A without placing the locks (5) on the hydraulic cylinders (4).

WORK
CRI - A 40 / 44 / 48 DISCS

- Before operating the **CRI-A**, proceed as follows:



01 - First, disarticulate the side frames (1).

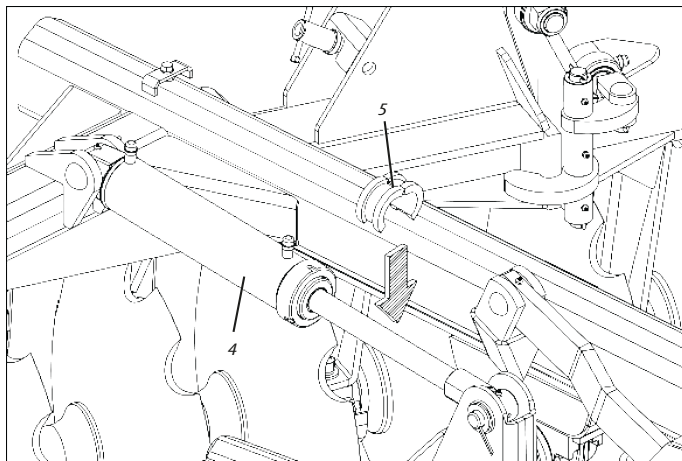
02 - Then operate the hydraulic cylinders (2) in order for these to move the support (3), locking the side frames (1).



ATTENTION

*When disarticulating the CRI-A, avoid having people close to it because of the risk of accidents caused by possible mechanical or hydraulic failure, causing the side frames (1) to lower rapidly.
Do not operate the CRI-A without locking the side frames (1).*

- 03** - Afterwards, to limit the depth of the **CRI-A**, operate the rods of the hydraulic cylinders (4) to the necessary measurement.
- 04** - Then put the limiting rings (5) on the rods of the hydraulic cylinders (4) until they fill up the entire space between the coupling of the rods and the plungers of the hydraulic cylinders (4).
- 05** - After working with the **CRI-A**, remove the limiting rings (5) from the hydraulic cylinders (4).



IMPORTANT

After adjustment, the CRI-A will always operate at the same depth both on hard and soft land because the limiting rings (5) will be limiting the stroke of the hydraulic cylinders (4), which means, it will prevent the oscillation of the wheels.



ATTENTION

Always put the same number of limiting rings (5) on the two hydraulic cylinders (4) for raising the wheels.



09. OPERATIONS

- The preparation of the **CRI-A** and the tractor will allow you to save time in addition to obtain better result in the field work. The following suggestions may be useful for you.

HARROW STRUCTURE

- After the first day of working with the **CRI-A**, tighten all bolts, nuts and check the condition of the bolts and latches of the harrow structure. Then perform a general retightening on all screws and nuts in the harrow structure every 24 hours of work.

DISCS SECTIONS

- Pay particular attention to the disc sections of the **CRI-A**. During the first week of use of the **CRI-A**, retighten all bolts and nuts on the disc sections daily, then retighten them periodically.

GENERAL RECOMMENDATION CRI-A 40 / 44 / 48 DISCOS

- Adjust the tractor according to the content of the instruction manual, always using front and rear weights to stabilize the equipment.
- Always couple to the tractor in low gear and very carefully.
- When using the **CRI-A**, it is important to check the hitch and transverse leveling system to make sure that the discs will have the same penetration depth into the ground.
- After the hitching and leveling, the next adjustments will be made directly in the field of work, analyzing the terrain in its texture, humidity and the types of operations to be done with the **CRI-A**.
- Observe the working and transport speeds specified on page 8. We do not advise you to exceed the speeds to maintain service efficiency and avoid possible damage to the **CRI-A**.
- Do not uncouple any hose without first relieving the circuit pressure by turning the control levers a couple of times with the engine off.
- When performing any maintenance on the **CRI-A**, lower it to the ground and switch off the engine.

HOW TO START HARROWING CRI -A 40 / 44 / 48 DISCS

Before operating the harrow, carry out complete revision, retightening all bolts, nuts, hose terminals, shafts and especially the disc sections.

- 01-When harrowing, always follow the terraces or contour line, starting operation with the terrace on the left side of the tractor operator.

DIRECTION OF MANEUVERS

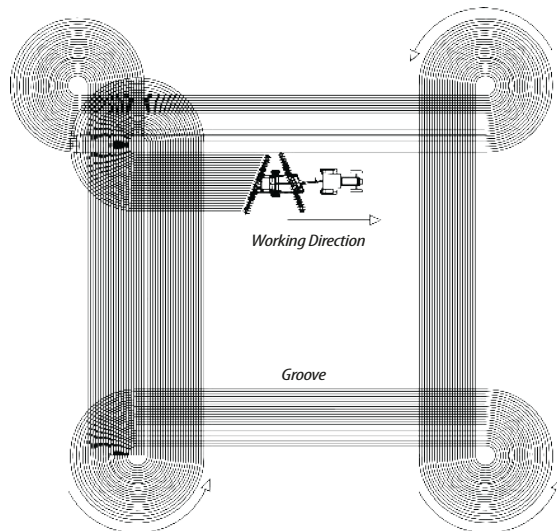
- 01-During harrowing (with the discs on the ground), DO NOT maneuver to the right, as the angles formed by the disc sections will transmit great effort to the equipment, especially the traction components.



ATTENTION

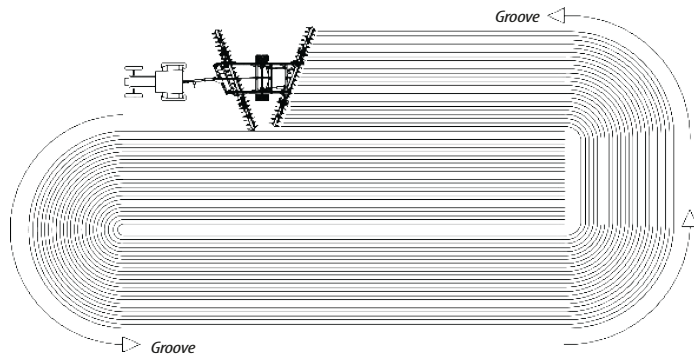
With the disc sections in the ground, it is necessary to make maneuvers to the left (closed side of the CRI-A) avoiding overloads.

HARROWING FROM OUTSIDE TO INSIDE CRI -A 40 / 44 / 48 DISCS



HARROWING FROM INSIDE TO OUTSIDE CRI -A 40 / 44 / 48 DISCS

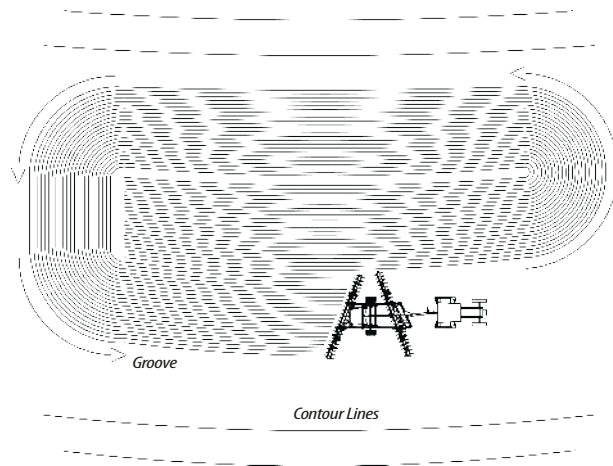
- 01 - Greater perfection is obtained in this direction. Start another plot when moving a lot on the headers.



PLOTS WITH CONTOUR LINES CRI -A 40 / 44 / 48 DISCS

- 01 - On lands with contour line, it is normal to start two plots at a time,

carefully starting the work with the level curve on the left side of the tractor operator. When reaching the middle of the level curve, start the other half of the level curve, and start another plot to reduce the use of fuel.



10. MAINTENANCE

01 -CRI-A was developed to provide the maximum yield on the land conditions. Experience has shown that periodic maintenance of certain parts of the harrow is the best way to prevent problems; hence we suggest the check.



ATTENTION

Constantly check the nuts and bolts, and retighten if necessary. General retightening maintenance of the equipment should be performed every 8 working hours.

TIRE PRESSURE CRI -A 40 / 44 / 48 DISCS

01 -The tires must always be correctly calibrated to avoid premature wears by excess or lack of pressure, and by ensuring precision in the distribution.



ATTENTION

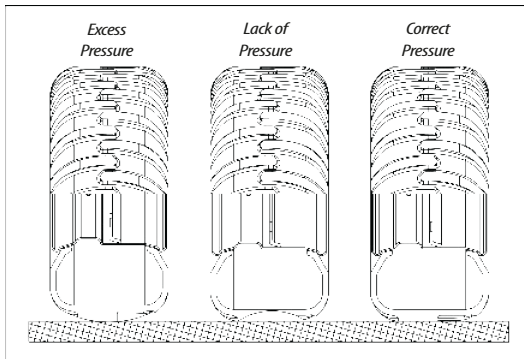
The recommended calibration of 52 lb/inch² is for tires model 400 x 60 14 ply supplied with the CRI-A. When calibrating the CRI-A, do not exceed the recommended calibration.

When purchasing the harrow without tires, it is recommended to consult the manufacturer on the ideal calibration for the model of tire to be used on the harrow



NOTE

The tire pressure of the tractor should be according to the pressure recommended by the manufacturer.



LUBRICATION

CRI -A 40 / 44 / 48 DISCS

- 01 -Lubrication is indispensable for a good performance and higher durability of the moving parts of the harrow, which helps save maintenance costs.
- 02 -Before executing the operation, carefully lubricate all greasers, always observing the lubrication intervals in the pages below. Check the quality of the lubricant in relation to its efficiency and purity, avoiding the use of products contaminated with water, soil and other agents.



NOTE

In the case of other manufacturers and/or equivalent brands that are not listed on this table, consult the technical manual of the manufacturer.

TABLE OF GREASE AND EQUIVALENT PRODUCTS

CRI-A 40 / 44 / 48 DISCOS

<i>Manufacturer</i>	<i>Types of grease recommended</i>
<i>Petrobrás</i>	<i>Lubrax GMA 2</i>
<i>Atlantic</i>	<i>Litholine MP 2</i>
<i>Ipiranga</i>	<i>Ipiflex 2</i>
<i>Castrol</i>	<i>LM 2</i>
<i>Mobil</i>	<i>Grease MP</i>
<i>Texaco</i>	<i>Marfak 2</i>
<i>Shell</i>	<i>Alvania EP 2</i>
<i>Esso</i>	<i>Multi H</i>
<i>Bardahl</i>	<i>Maxlub APG 2 EP</i>
<i>Valvoline</i>	<i>Palladium MP-2</i>
<i>Petronas</i>	<i>Tutela Jota MP 2 EP</i>
	<i>Tutela Alfa 2K</i>
	<i>Tutela KP 2K</i>

Table 02

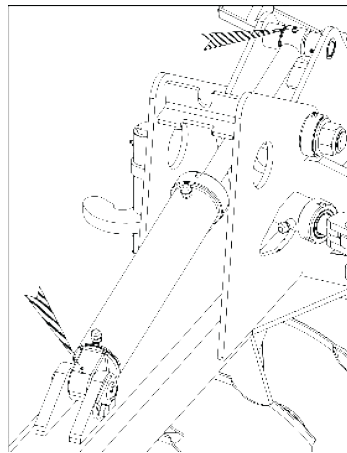
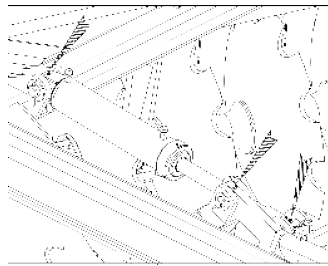
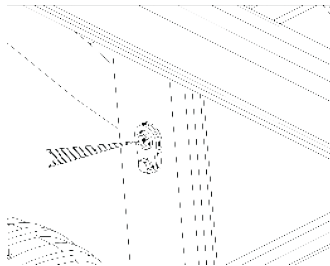
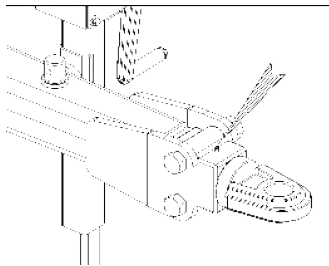


BALDAN

Instruction Manual

CRI-A - 52

LUBRICATE EVERY 24 HOURS OF WORK
CRI -A 40 / 44 / 48 DISCS



ATTENTION

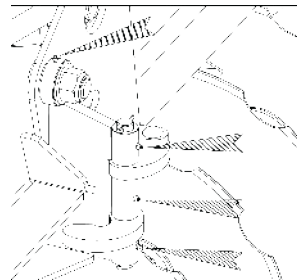
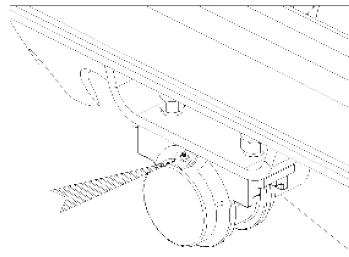
When lubricating the CRI-A, do not use excess quantity of new grease. Add a sufficient amount.

LUBRICATE EVERY 24 HOURS OF WORK
CRI-A 40 / 44 / 48 DISCS



ATTENTION

*When lubricating the CRI-A, do not use excess quantity of new grease.
Add a sufficient amount*

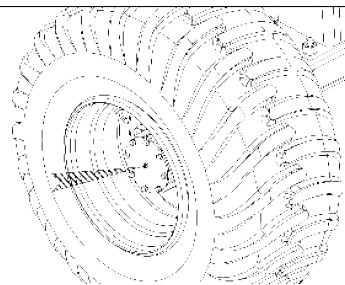


LUBRICATE EVERY 60 HOURS OF WORK
CRI-A 40 / 44 / 48 DISCS



ATTENTION

*When lubricating the CRI-A, do not use excess quantity of new grease.
Add a sufficient amount.*



BALDAN

Instruction Manual

CRI-A - 54

BEARING ADJUSTMENTS

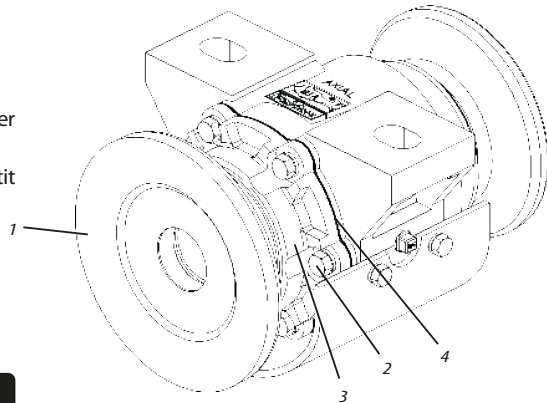
CRI -A 40 / 44 / 48 DISCS

- When the bearings become slack, proceed as follows to adjust them:

- 01** - Remove the washer (1).
- 02** - Then loosen the bolts (2) and remove the cover from the bearing (3).
- 03** - After, remove one or two joints (4) from the bearing cover (3). Put back the bearing cover (3) and retighten.
- 04** - If the slackness persists, face the bearing cover (3) to increase the adjust, and then mount it on the bearing with as many joints considered necessary.
- 05** - The bearing should rotate freely without slacks.



*Do not mount the bearing without joints (4).
Check the condition of the bearings every 100 hours of work.*



BEARING LUBRICATION

- 01** - On the first days of work with the **CRI-A**, check the oil level of the bearings daily and then check it after every 120 hours of work.
- 02** - The oil should be changed after every 1200 hours of work. Use oil for transmission 90 API GL4, MIL-L-2105; SAEJ306, May/81; SAE 80W/90 and 140.



*The ideal oil level is the level at which it reaches the hole of the plug.
Find a flat place when checking the oil level of bearing.*

OPERATIONAL MAINTENANCE - PART I

<i>Problems</i>	<i>Probable Causes</i>	<i>Solutions</i>
Tires are damaged.	Work area with rocks, stubs or crop remains with stems that shred the tire.	Eliminate elements that damage tires before using the CRI-A .
	Improper tire pressure, creating deformations.	Maintain proper tires pressure.
Weird noise on wheels.	Loosen wheels or gap in wheel hub.	Retighten the wheel nuts and adjust wheel hub bearings.
	Breaking of bearings.	Identify the occurrence and replace damaged parts.
Quick coupling is not fitting.	Couplings of different types.	Change them for males and females of the same type.
Leakage in quick couplings.	Insufficient tightening.	Retighten carefully without excess.
	Damaged repairs.	Replace hubs.
Leakage in hydraulic hose.	Lack of sealing material on the thread.	Use sealing tape and retighten carefully.
	Insufficient tightening.	Retighten carefully.
	Damaged repairs.	Replace hubs.

OPERATIONAL MAINTENANCE - PART II

<i>Problems</i>	<i>Probable Causes</i>	<i>Solutions</i>
It's gathering a lot of dirt around the discs.	Soil is too wet.	Do not use CRI-A in soil with high humidity.
	Wipers are too far away from discs.	Adjust the distance between the wipers and the discs.
	There is dry earth stuck to the discs from previous works.	Remove excess dirt stuck at the end of each job.
Discs do not penetrate the ground.	Uneven harrow.	Levelling of the CRI-A .
	Hard and dry soil.	Subsoil before using the CRI-A .
	Wheelset is not in working position.	Collect the wheel leaving it in its working position.
	Discs are unwiring or extremely worn.	Replace discs.
Quick coupling is not coupling.	Couplings of different brands.	Use a quick coupling of the same brand.
	Mixing of needle-type coupling with sphere-type coupling.	Always use quick coupling of the same type.
	Pressure on the system.	Relief the pressure to couple.

OPERATIONAL MAINTENANCE - PART III

<i>Problems</i>	<i>Probable Causes</i>	<i>Solutions</i>
<i>Sequential Hydraulics not working properly.</i>	<i>Hoses incorrectly connected.</i>	<i>Connect them correctly as per pages 34 and 35.</i>
	<i>Deregulated valve.</i>	<i>Adjust the valve as per page 38.</i>
	<i>Hydraulic activation with intense movement of the lever.</i>	<i>Lightly actuate the tractor's hydraulic system lever.</i>
	<i>Tractor pressure set above 190 Bar.</i>	<i>Adjust the tractor pressure to 180 Bar.</i>
	<i>Pressure reducing nipples are not mounted on the manifold.</i>	<i>Mount the pressure reducing nipples on the distributor as per page 37.</i>
	<i>Pressure reduction nipples were mounted at wrong points on the manifold.</i>	<i>Mount the pressure reduction nipples at the right points on the distributor as per page 38.</i>

CARES CRI -A 40 / 44 / 48 DISCS

- 01 - Before each work, check the conditions of all pins, bolts, bearings, discs and sections. Retighten them when necessary.
- 02 - The displacement speed must be carefully controlled according to the conditions of the land.
- 03 - The **CRI-A** models 40 / 44 / 48 discs are used in various applications, requiring know-how and attention during their handling.
- 04 - Only local conditions can determine the best way of operating the **CRI-A**.
- 05 - Use the suitable methods and tools to mount or dismount any part of the **CRI-A**.
- 06 - Always check if the parts do not present wears. If replacement is required, always demand for original Baldan parts.
- 07 - Check the hydraulic system every 40 hours of work.
- 08 - Check seals and bearings every 1500 working hours.
- 09 - Check the condition of discs and wheels whenever necessary.
- 10 - Always keep the **CRI-A** discs sharp.

GENERAL CLEANING CRI-A 40 / 44 / 48 DISCS

- 01 - When storing the **CRI-A**, carry out general cleaning and wash it. Check if the paint is not worn, otherwise apply a general coat of paint, apply protection oil and completely lubricate the **CRI-A**.
- 02 - Completely lubricate the harrow. Check all the moving parts of the **CRI-A** for wear or looseness and perform the necessary adjustments or replacement of the parts, leaving the harrow ready for the next operation.
- 03 - After all the maintenance cares, keep your **CRI-A** on a flat surface, in a sheltered and dry location away from animals and children.
- 04 - Washing the **CRI-A** at the start of work is recommended.



NOTE

Appropriate and periodic maintenance are necessary to ensure the long life of the equipment.

11. CALCULATIONS

APPROXIMATE HOURLY PRODUCTION CRI -A 40 / 44 / 48 DISCS

- Use the formula below to calculate the approximate hourly production of the **CRI-A** harrows.

$$A = \frac{L \times V \times F}{X}$$

WHERE:

A = Area to be worked

L = Working width of the harrow (in meters)

V = Average speed of the tractor (in meters/hour)

F = Production Factor – 0.90

X = Value of the hectare – 10,000 m² (the value varies according to the region)

- **Example:** A harrow has 48 discs, how many Ha will it produce in one working hour at an average speed of 7 km/h?

A = ?
L = 6,39m
V = 7.000m/h
F = 0,90
X = 10.000 m² (Calculated in hectares)

$$\frac{A = 6,39 \times 7.000 \times 0,90}{10.000} = 4,02 \text{ Ha/h}$$



The hourly production of the CRI-A harrow can vary due to factors that change the rhythm of work such as wetness and hardness of the soil, declivity of the land, inadequate adjustments and working speed).

APPROXIMATE HOURLY PRODUCTION TABLE

CRI -A 40 / 44 / 48 DISCS

<i>Model</i>	<i>Working Width (m)</i>	<i>Average Speed (m/h)</i>	<i>Production Factor</i>	<i>Approximate Production in Hectares/Hour</i>
CRI-A 40	5,29	7.000	0,90	3,33
CRI-A 44	5,84	7.000	0,90	3,67
CRI-A 48	6,39	7.000	0,90	4,02

Table 03

01 -The formula to calculate the approximate production refers to the calculation of areas to be worked or areas worked per harrow. To know the time spent working an area of known value, divide the value of this area by the hourly production of the harrow.

- **Example: What is the time “X” spent for a CRI-A harrow of 48 discs to produce 35 hectares at an average speed of 7km/h?**

$$X = \frac{35 \text{ Ha}}{4,02 \text{ Ha/h}} = 8,70 \text{ approximate hours to work 35 hectares.}$$



The hourly production of the CRI-A harrow can vary due to factors that change the rhythm of work such as wetness and hardness of the soil, declivity of the land, inadequate adjustments and working speed, factors that are different from the table above, which were obtained with field work on soils with normal conditions.

12. IDENTIFICATION

IDENTIFICATION PLATE CRI-A 40 / 44 / 48 DISCS

In order to refer parts catalogues or apply technical support from Baldan, always indicate model (1), serial number (2), manufacture date (3) located on the identification tag.

ALWAYS REQUIRE BALDAN ORIGINAL PARTS

- Look in your local, a reseller BALDAN, he will have in stock genuine parts.



PUBLICATIONS

Code: 60550103713
CPT: CRIA12820B



WARNING

The draws contained in this instruction manual are merely illustrative.



CONTACT

*In case of doubt do not operate the equipment, please contact our After-sales Service.
Phone: 0800-152577
e-mail: export@baldan.com.br*

PRODUCT IDENTIFICATION

- Do the identification below to always have the properly informations about your equipment life time.

Owner: _____

Dealer: _____

Farm: _____

City: _____ *Country:* _____

Model: _____

Warranty certified number: _____ *Serial number:* _____

Purchase date: _____ / _____ / _____

Invoice. Nr: _____

[illegible]

[illegible]

CERTIFICATE OF WARRANTY

- 01 - **BALDAN IMPLEMENTOS AGRÍCOLAS S/A**, guarantee the normal operation of the product for a 6 (six) months period dated from the dealers's bill of sale to the first final customer.
- 02 - During this period, **BALDAN** compromise itself to repair the material or manufacturing defects, but the labour, the freight and other expenses are the dealer's responsibility.
- 03 - At the guarantee period, all the request and replacement of any defective part must be made to the dealer of the region, which will send the defective part for analysis at **BALDAN**.
- 04 - When this procedure won't be possible and the dealer couldn't have the ability to solve the problem, the dealer can ask for **Baldan's Technical Assistance** using the specific form delivered to them.
- 05 - After the analysis of the items replaced by **Baldan Technical Assistance** and if we conclude that it wasn't a guarantee problem, then the dealer will be the responsible for all costs related to the replacement; as well as material expenses, travel including accommodation and meals, also the accessories, lubricant used or any other expenses after having called the Technical Assistance. And, withal, the company **BALDAN** is authorized to issue the billing in name of the respective reseller.
- 06 - Any repair made to the product which is in warranty period by the dealer, will only be authorized by **BALDAN** after budget previous presentation describing pieces and labour to be accomplished.
- 07 - It is out of this term the product which has repairs or modifications not made by dealers from **BALDAN'S** network, as well as pieces applications or not authentic components to the product by the user.
- 08 - This certificate of guarantee will become invalid when notice that the damage or defect is the result of incorrect use of the product, of instructions non-observance or operator's inexperience.

- 09** -It's stipulated that this guarantee don't cover tires, polyethylene deposits, universal joints, hydraulic components, etc, wich equipments are guarantee by their manufacturers.
- 10** -The material or manufacture defects, object of this certificate of guarantee, will not be, by any hypotesis, reason for cancellation of the contract of sale, or indemnity of any kind.
- 11** -For a warranty solicitation to the distributor, you have to proceed in the following manner:
- 12** -Send the technical informe detailed telling the problem (technical assistance request form to the client), you can find it send us an email to **aftersales@baldan.com.br** or acessing our website.
- 13** -If it's possible send films and photos from the requested spare parts.
- 14** -To point at the form: serial number, manufacture year, etc, that is, all information asked at the form. The damage spare parts should be available for analysis of the the after sales department in a future visit (in case of requested).
- 15** -**BALDAN** keeps the right of changing and or improve the technical characteristics of its products, without notice and without the obligation of act like this way with its previously manufactured products.

INSPECTION AND DELIVERY CERTIFICATE

- **SERVICE BEFORE THE DELIVERY:** This equipment was very carefully prepared by the dealer's organization, inspected in all its parts in agreement with the manufacture's prescription.
- **DELIVERY SERVICE:** The user was informed about the current guarantee terms and instructed about maintenance care and utilization.
- I confirm that I was informed about the current guarantee terms and instructed about the correct utilization and maintenance of this product.

Product: _____ *Serial number:* _____

Date: _____ *Bill of sale:* _____ *Store:* _____

City: _____ *State:* _____ *Zip code:* _____

Owner: _____ *Phone:* _____

Adress: _____ *Number:* _____

City: _____ *State:* _____

E-mail: _____ *Date of sale:* _____

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City: _____ *State:* _____ *Zip code:* _____

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Adress: _____ *Number:* _____

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Product: _____ Serial number: _____

Date: _____ Bill of sale: _____ Store: _____

City: _____ State: _____ Zip code: _____

Owner: _____ Phone: _____

Address: _____ Number: _____

City: _____ State: _____

E-mail: _____ Date of sale: _____

3ª Page - Manufacturer

Please send this filled copy to Baldan, until 15 days after the purchase.

Signature / Store's stamp _____

1.74.05.0059-5

AC MATÃO
ECT/DR/SP

RESPONSE CARD

NO STAMPING IS REQUIRED

THE STAMP WILL BE PAID BY:



BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

Av. Baldan, 1500 | Nova Matão | CEP: 15993-900 | Matão-SP | Brasil

Phone: (0**16) 3221-6500 | Fax: (0**16) 3382-6500

Home Page: www.baldan.com.br | e-mail: sac@baldan.com.br

Export: Phone: 55 16 3321-6500 | Fax: 55 16 3382-4212 | 3382-2480

e-mail: export1@baldan.com.br



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export@baldan.com.br

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baldan.com.br